



PUBLIC WORKS DEPARTMENT  
**WATER RESOURCES DIVISION**

# STAGE 3 DROUGHT UPDATE

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Water Commission  
July 20, 2017

# Outline

- Drought Status
- Demand Status
- Water Supply Status
  - Gibraltar, Cachuma, Imported Water, Groundwater, Recycled, Desal
- Drought Funding
- Recommendation

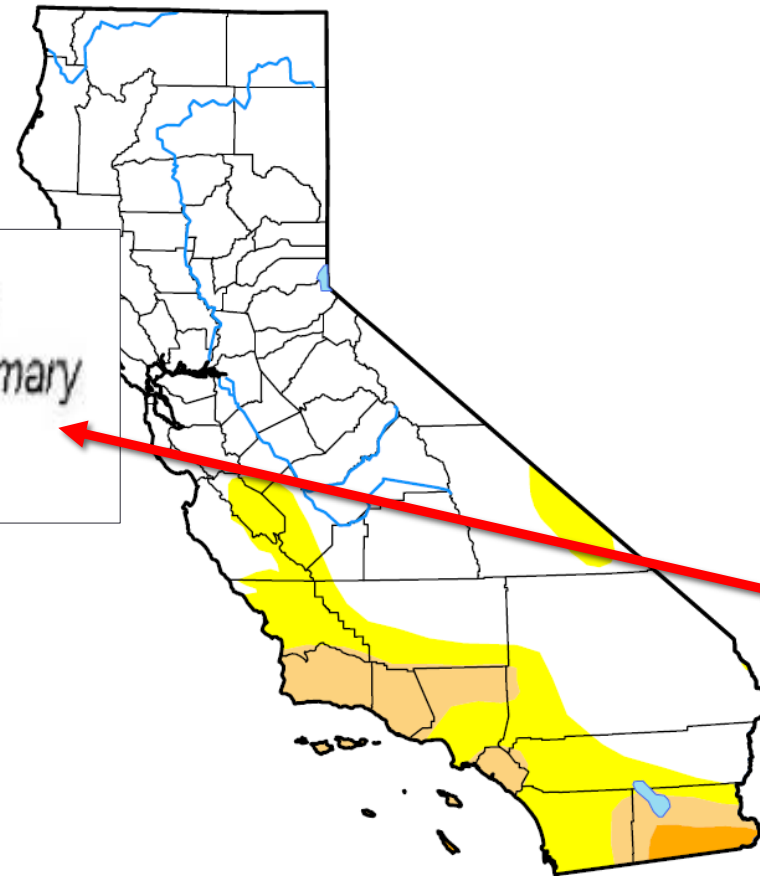
# DROUGHT STATUS

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# Drought has improved, but it is far from over

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

## U.S. Drought Monitor California



**July 4, 2017**  
(Released Thursday, Jul. 6, 2017)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	76.46	23.54	8.24	1.06	0.00	0.00
<b>Last Week</b> 06-27-2017	76.47	23.53	8.24	1.06	0.00	0.00
<b>3 Months Ago</b> 04-04-2017	76.54	23.46	8.24	1.06	0.00	0.00
<b>Start of Calendar Year</b> 01-03-2017	18.07	81.93	67.61	54.02	38.17	18.31
<b>Start of Water Year</b> 09-27-2016	0.00	100.00	83.59	62.27	42.80	21.04
<b>One Year Ago</b> 07-05-2016	0.00	100.00	83.59	59.02	42.80	21.04

### Intensity:

■ D0 Abnormally Dry     ■ D3 Extreme Drought  
■ D1 Moderate Drought     ■ D4 Exceptional Drought  
■ D2 Severe Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

### Author:

David Simeral  
Western Regional Climate Center

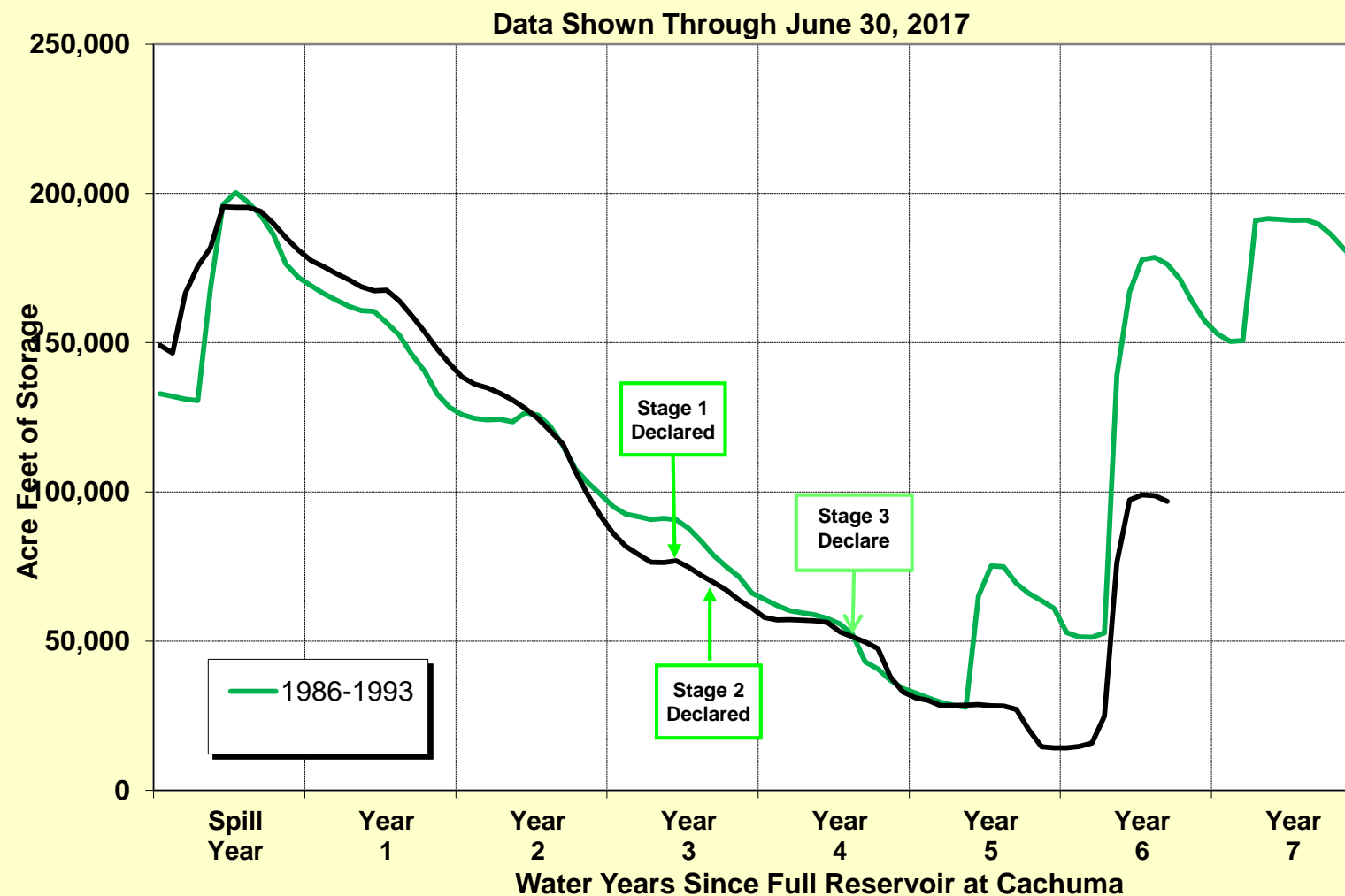


<http://droughtmonitor.unl.edu/>

# 5-Year Record Low

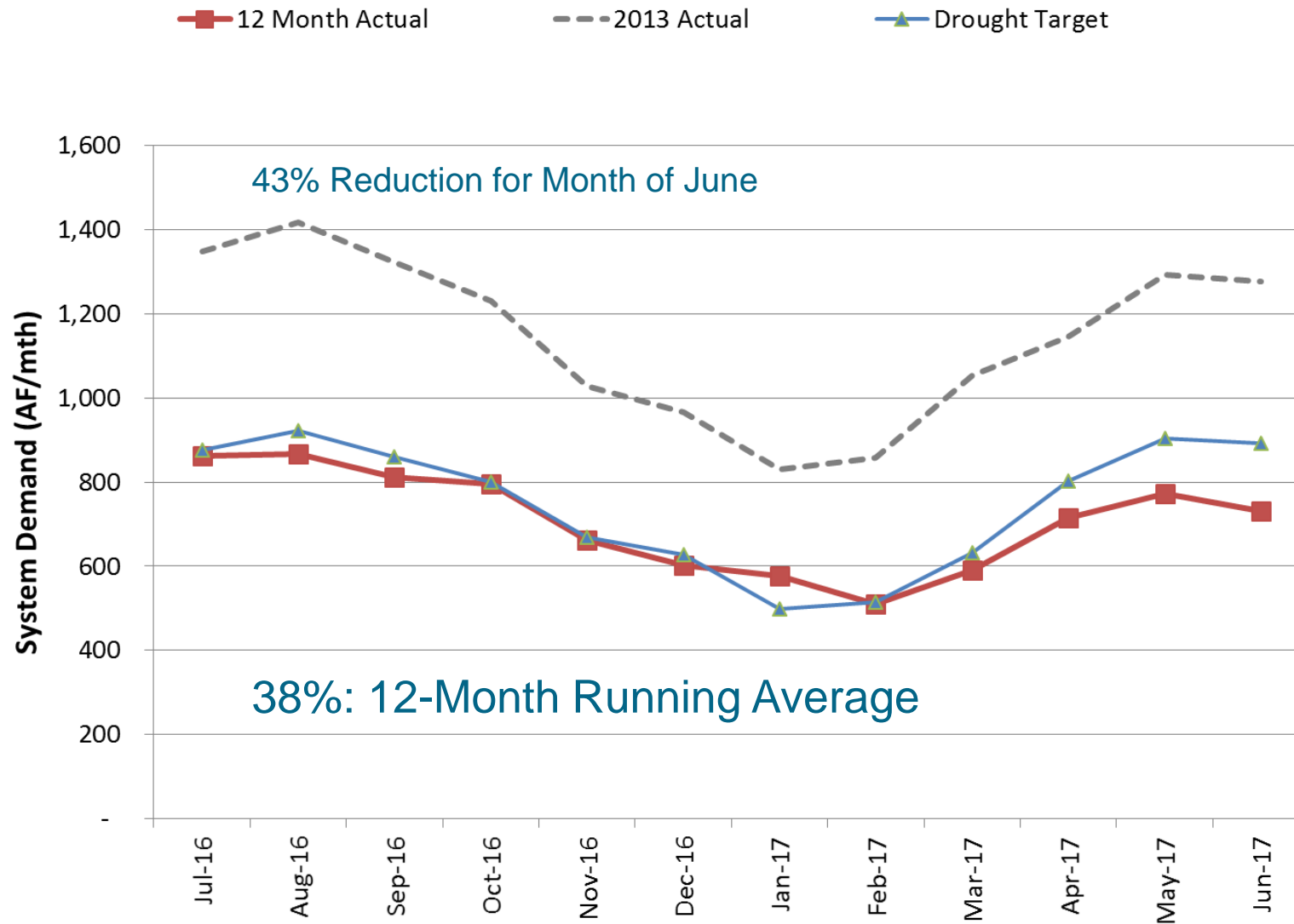
Drought Period	Total Rainfall at Gibraltar, inches
1947-1952	105.55
1986-1991	92.79
2011-2016	63.37; new record low

## Cachuma Storage: Current Drought & 1986-93 Period



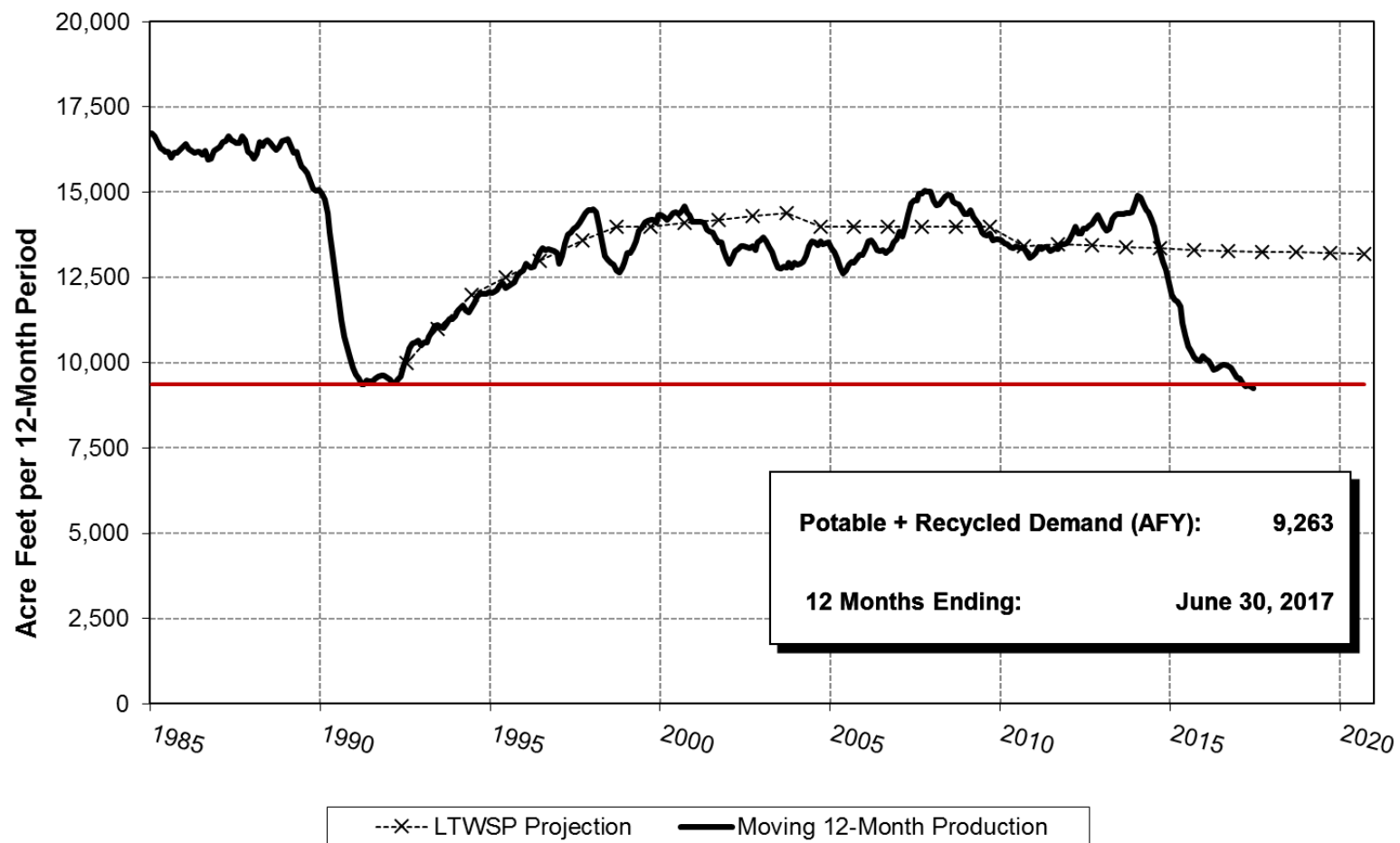
# DEMAND STATUS

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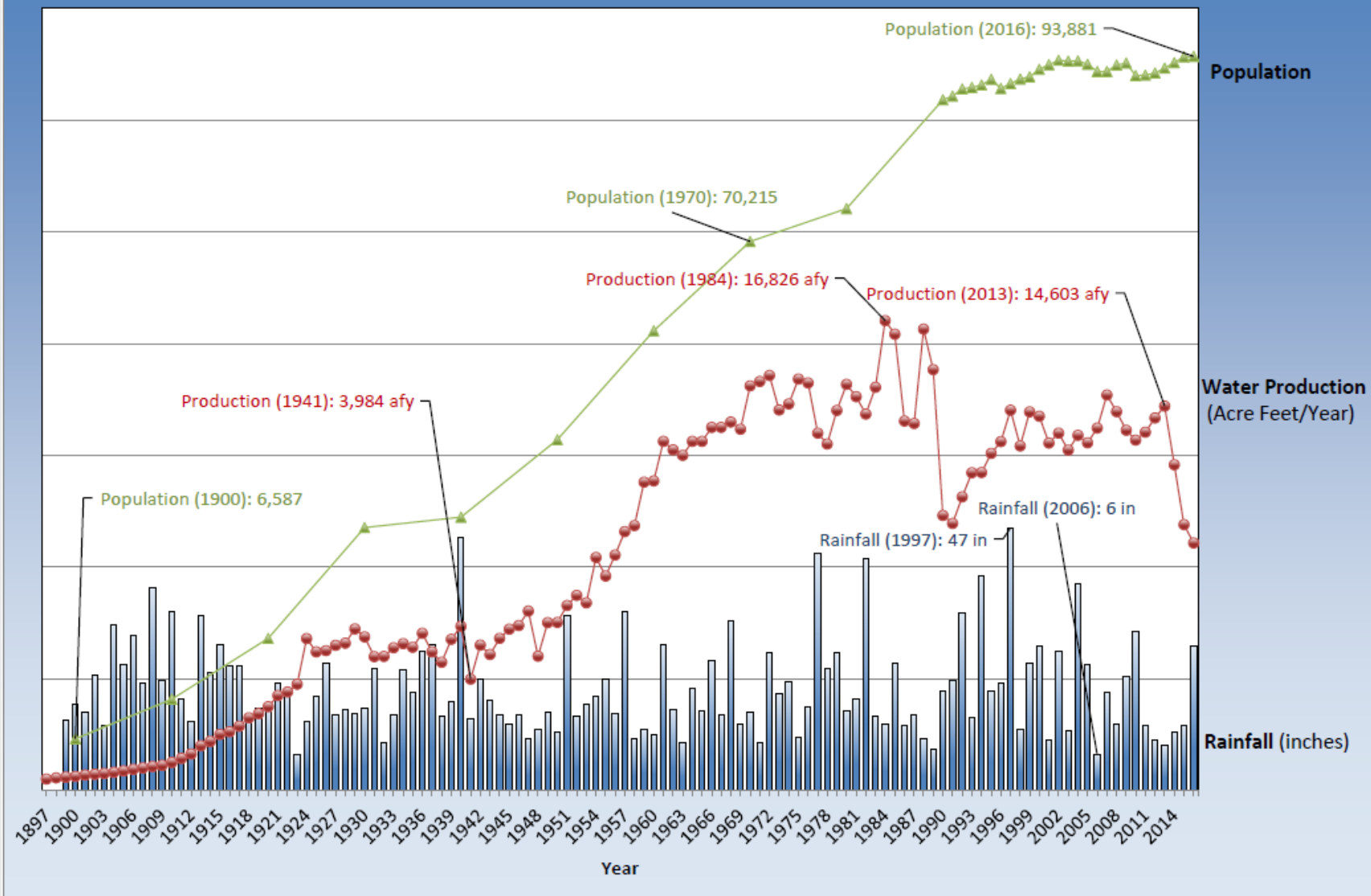


### City of Santa Barbara Water Demand Moving 12-Month Production to Serve Potable + Recycled Systems



City of Santa Barbara - Public Works Department

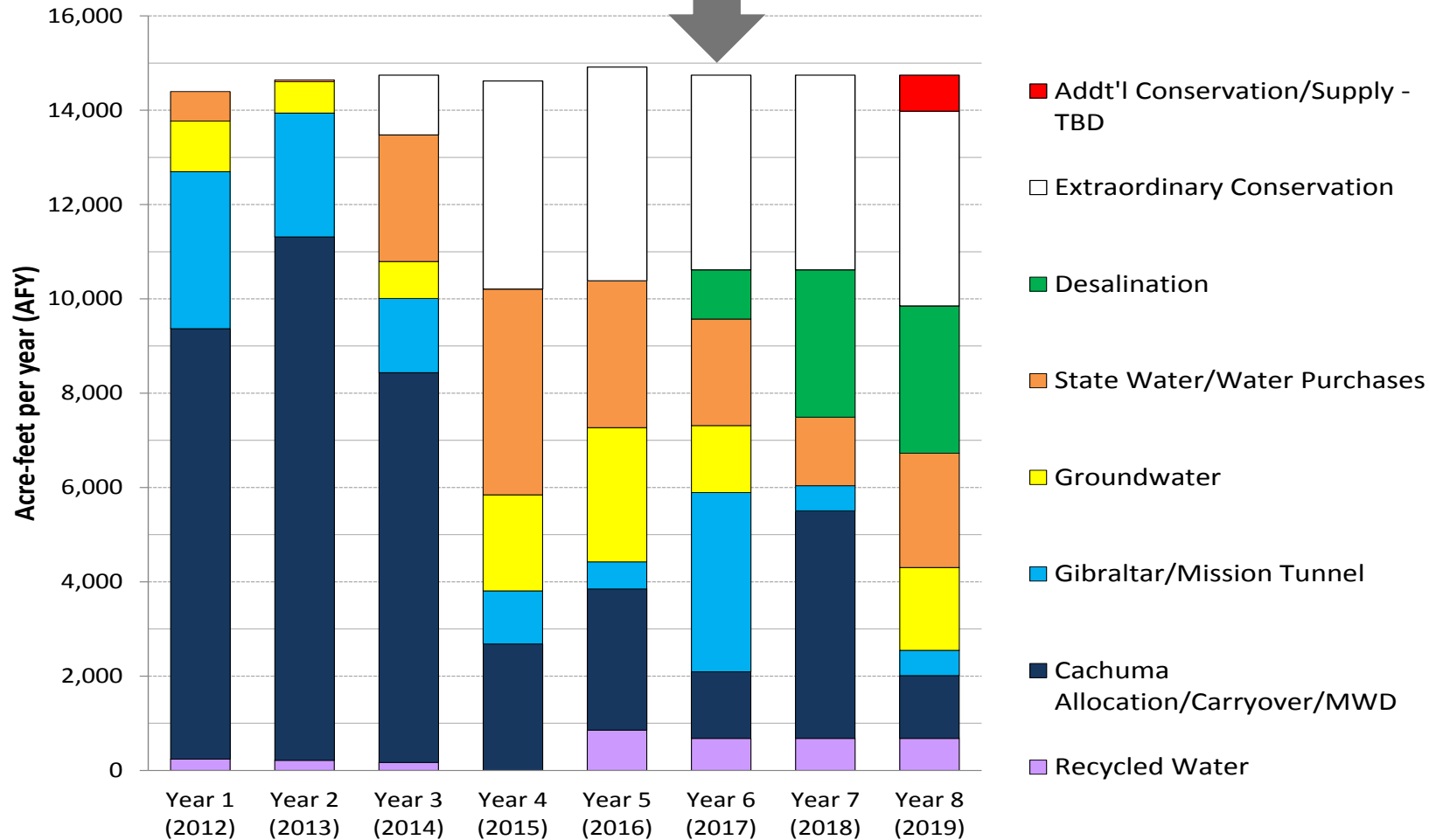
## Population, Water Production and Rainfall 1897-2016 City of Santa Barbara



# SUPPLY STATUS

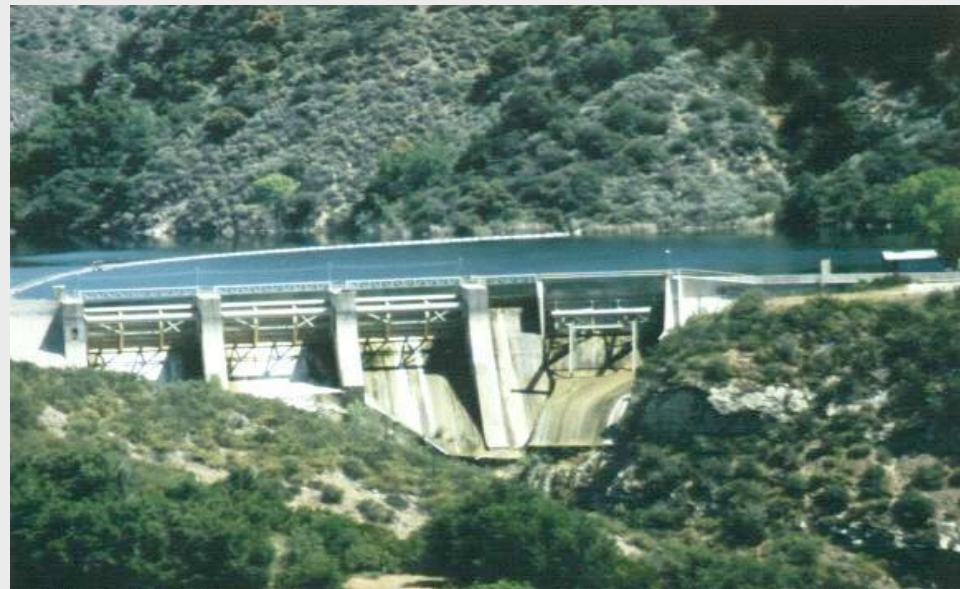
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# Water Supply Strategy



# Gibraltar Reservoir

- Storage as of 7/10/17
  - 4,385 Acre Feet (83% of capacity)
- Status
  - Stopped spilling in early May
  - Maximizing water right diversions
  - Water quality remains good



# Cachuma

- Storage as of 7/10/17
  - 96,296 Acre Feet (50% of capacity)
- Status
  - Fish releases through Hilton Creek Emergency Backup System
  - 40% allocation for WY17
  - Not all stored water is Project Water
  - Downstream Water Rights release expected to occur this summer
  - Whittier Fire

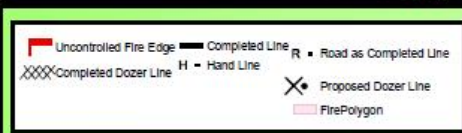
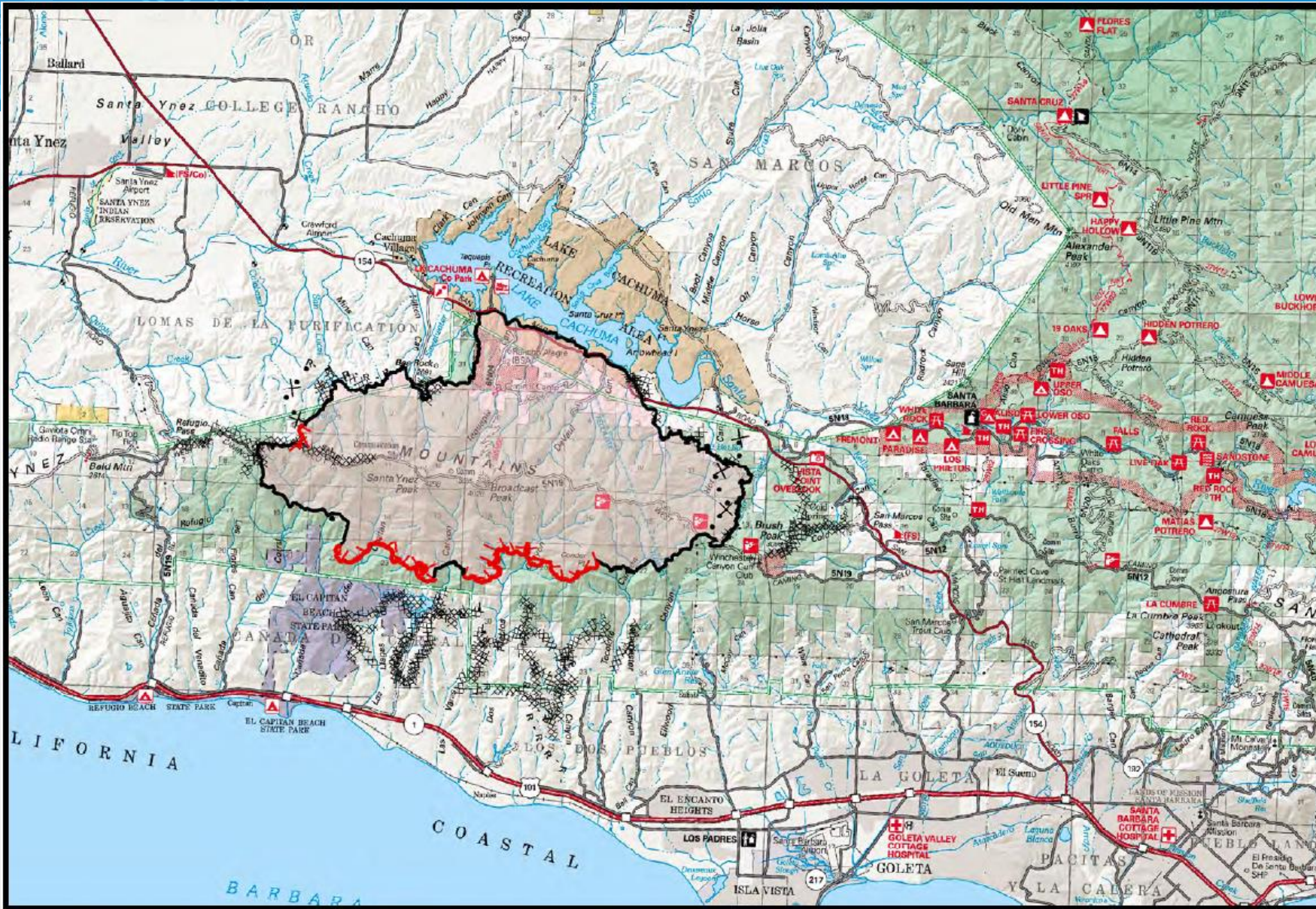


# Cachuma - Whittier Fire

- <https://inciweb.nwcg.gov/incident/5339/>
- As of 07/19/17 at 6:17:03 AM
  - 75% contained
  - 18,395 acres







## Whittier Incident

July 19, 2017





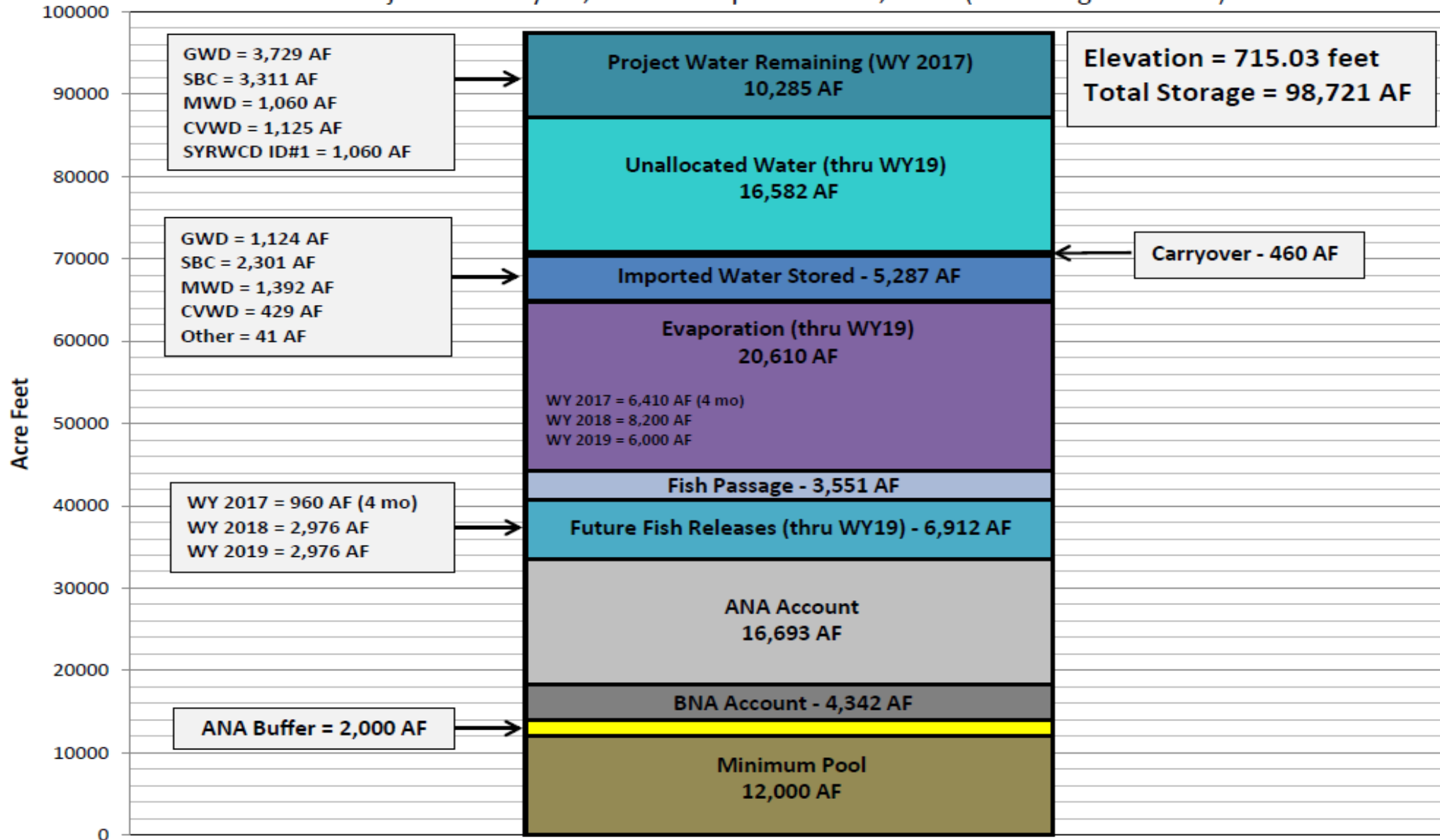
## Cachuma – Whittier Fire

- When rain returns, expect impacts to water quality and storage capacity
- Burned Area Emergency Response (BAER) report will be prepared by US Forest Service
- Staff will be evaluating response options

# Cachuma Reservoir

DRAFT

Projection: May 31, 2017 to September 30, 2019 (assuming no inflow)



Produced by Santa Barbara County Water Agency



# Imported Water

- City's imported water available (estimated as of 07/06/17)
  - ~2,300 AF in Cachuma
  - ~3,400 AF in San Luis Reservoir
- Water Debt
  - Water Purchase of 2,000 AF from City of Santa Maria has been executed
  - 2,900 AF currently scheduled for return to AVEK
  - Approximately 3,300 AF of remaining water debt
- Currently maximizing delivery to Cachuma, but will evaluate reducing deliveries
- Current average pipeline capacity for City ~ 280 AF/month

# Imported Water Delivery Considerations

- \$282/AF variable cost to convey water to Cachuma, plus value of purchased water (~\$900/AF avg)
- Is San Luis at risk of spill?
  - Consider sending to Cachuma, repaying water debt, and/or groundwater banking opportunities
- Is Cachuma at risk of spill?
- Is there demand for water, or will it evaporate at Cachuma before used for water supply?

## Cachuma Evap

- Based on previous experience, evaporation allocations to imported water increase as lake levels drop

	May 2016	May 2017
Total Cachuma Storage, AF	28,235	99,002
Imported Water Storage, AF	1,148	5,287
Imported Water Evaporation, AF	147	116
Imported Water Evap, %	12.8%	2.2%

# Example

Delivery to Lake	Storage	Demand for Water	Supply Shortage
	2000	0	0
300	2024	0	0
300	2001	50	0
300	1937	100	0
300	1837	150	0
300	1704	200	0
300	1544	250	0
300	1358	300	0
300	1195	300	0
300	1096	250	0
300	1008	250	0
300	975	200	0

Delivery to Lake	Storage	Demand for Water	Supply Shortage
	2000	0	0
	1760	0	0
	1505	50	0
	1236	100	0
300	1220	150	0
300	1161	200	0
300	1066	250	0
300	938	300	0
300	826	300	0
300	771	250	0
300	722	250	0
300	723	200	0

Still meet demands;  
Save 900 AF for other opportunities  
Save ~\$1.1 million in purchase and conveyance costs

# Groundwater

- Groundwater basins currently resting, maximizing use of Gibraltar water
  - Currently at ~30% of capacity\*
  - Groundwater levels at historic lows
  - Full recovery expected to take 5-10 years

\*Estimates based on USGS Groundwater Model



# Recycled Water Treatment Facility

- Facility has remained in operation throughout construction and continues to meet current demands
- Construction modifications have been completed
- Operational testing underway, may continue through September 2017
- Pursuing legal action to recoup costs for design errors that required modifications



# Desalination Project

- Major construction is complete
- Startup/Testing
  - May 30<sup>th</sup> - desalinated water put into distribution system on an intermittent basis
- Acceptance Testing currently in progress – production is still intermittent as they work through startup issues
- Public Outreach
  - Site is still busy with activity associated with startup; no public tours are being scheduled
  - Once the facility has successfully completed all startup requirements a public open house will be scheduled



# DROUGHT FUNDING

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## Status of Grants and Loans

- Prop 1 Water Desalination Grant Program
  - Up to \$73M available for construction projects, max project award of \$10M
  - Jun 16 - final grant guidelines released
  - Sep 1 – grant applications due
  - Nov 3 (tentative) – award announcements
  - Early 2017 – funding agreements executed

**For more information:**

**[www.SantaBarbaraCA.gov/Water](http://www.SantaBarbaraCA.gov/Water)**

**Call: 564-5460**



# Example 1

Delivery to Lake	Storage	Demand for Water	Supply Shortage
300	264		
300	496		
300	701		
	617		
	543		
	478		
	420		
	370		
	325		
	286	300	(14)
		300	(300)
		300	(300)

If water is delivered too early, it may not be there when you need it.